EXHIBIT D

Exhibit A-02 to Defendant's Invalidity Contentions:
Comparison of U.S. Patent No. 6,660,651 and Japanese Unexamined Patent App. Pub. No. JP H11-274031 (Wakui)

As described in the following claim chart, claims 19, 20, 21, 22, 23, 24, 72, 73, 74, 75, 77, 78, 79, 80, and 81 of U.S. Patent No. 6,660,651 ("the '651 Patent") are invalid under 35 U.S.C. §§ 102 and/or 103 in view of Japanese Unexamined Patent App. Pub. No. JP H11-274031 ("Wakui"). The citations below are to the page numbers of the certified English-language translation of Wakui.

The below chart compares Wakui to the '651 Patent claims. However, its U.S. counterpart, U.S. Patent No. 6,327,026, includes substantially the same relevant disclosure, and therefore the below chart applies equally to the U.S. counterpart.

To the extent that Wakui is found not to anticipate one or more of the claims of the '651 Patent, those claims are obvious in view of Wakui, alone or in combination with other prior art references, including, without limitation, one or more references identified in Exhibits A1 to A14 to Defendant's Preliminary Invalidity Contentions. Defendant's Preliminary Invalidity Contentions provide additional details regarding the motivation to combine Wakui and the references cited in those exhibits.

Citations to particular documents or passages are merely exemplary of where each limitation is found. Defendant reserves the right to rely on other documents or passages providing comparable evidence of how Wakui alone or in combination with other prior art renders the '651 Patent invalid.

ELEMENT	'651 CLAIM ELEMENT	WAKUI
19[Pre]	A method, comprising:	Defendant does not concede that the preamble is limiting. To the extent it is limiting, *see, e.g.*: • Wakui at Abstract: An exposure device that exposes and transfers a reticle pattern on a photosensitive substrate is provided with a table for holding the reticle or the photosensitive substrate, and a parallel link mechanism for positioning the table. Furthermore, a device for relatively positioning a first object and a second object has a first parallel link mechanism for holding and moving the first object and a second parallel link mechanism for holding and moving the second object, wherein the first parallel link mechanism and the second parallel link mechanism are supported by a common base, the base supports a third

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		object, and the first object and the second object are positioned relative to the third object. • Wakui ¶ 1: [Technical Field of Invention] The present invention relates to an exposure device that exposes and transfers a reticle pattern on a photosensitive substrate in a photolithography step for manufacturing a device such as an imaging element such as a semiconductor element or a CCD (charge coupled device), a liquid crystal display lement, or a thin film magnetic head, and relates to a device manufacturing method and positioning device. In particular, the present invention relates to a semiconductor exposure device having a parallel link mechanism that can hold a semiconductor wafer, position it with high precision, and transport it at a high speed. • Wakui ¶¶ 25-27: The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. In FIG.1, PL is a parallel link mechanism for driving the movable plate 19 to the main unit plate 8. 19 illustrates the movable plate, 21 illustrates a spherical bearing attached to the movable plate 19 and a fixed plate 20, and 22 illustrates an extendable actuator unit. In the present embodiment, the main unit plate 8 functions as a fixed plate, but another fixed plate may be provided separately

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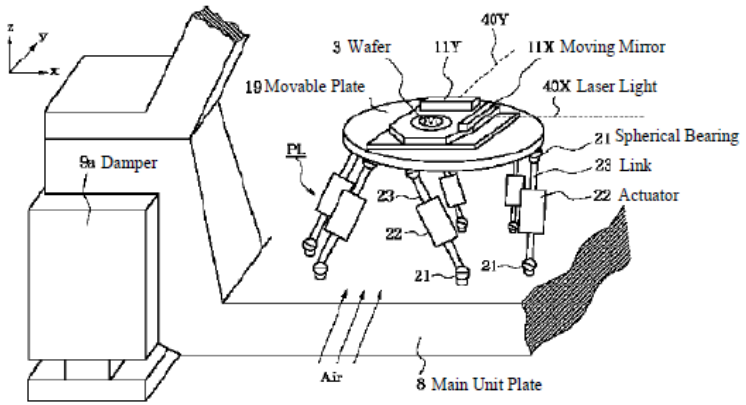
ELEMENT	'651 CLAIM ELEMENT	WAKUI
		on the main unit plate. A hydraulic actuator, an air pressure cylinder, an electric motor and a ball screw, a combination of an electric motor, a decelerator, and a ball screw, a linear motor, or the like can be used as the extendable actuator. A link 23 is configured of the spherical bearing 21 and the actuator unit 22, and in the parallel link mechanism illustrated in the drawings, the movable plate 19 and the fixed plate 20 are connected by a total of six links 23. By controlling the expansion amount of each link, the posture can be arbitrarily set in six degrees of freedom, namely the coordinate system of the movable plate 19 (x_1, y_1, z_1) with respect to the coordinate system provided in the fixed plate 20 (x_2, y_2, z_2). • Wakui at FIG. 1: [FIG. 1] 

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		See also 19[a]-19[d] below.
19[a]	providing a process chamber comprised of a wafer stage, said wafer stage having a surface that is adjustable;	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 1: [Technical Field of Invention] The present invention relates to an exposure device that exposes and transfers a reticle pattern on a photosensitive substrate in a photolithography step for manufacturing a device such as an imaging element such as a semiconductor element or a CCD (charge coupled device), a liquid crystal display lement, or a thin film magnetic head, and relates to a device manufacturing method and positioning device. In particular, the present invention relates to a semiconductor exposure device having a parallel link mechanism that can hold a semiconductor wafer, position it with high precision, and transport it at a high speed. • Wakui ¶¶ 13-15: In light of the above, the exposure device of the present invention exposes and transfers a reticle pattern on a photosensitive substrate, and is provided with a table for holding the reticle or the photosensitive substrate, and a parallel link mechanism for positioning the table. The parallel link mechanism desirably has at least one of a first parallel link mechanism for moving a table on which the wafer is mounted, and a second parallel link mechanism for moving a table on which the reticle is mounted and it is desirable for at least one of the first and second parallel link mechanisms to be supported via a lens-barrel plate supporting a projection optical system.

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		Moreover, it is desirable to have at least one of first measuring means for measuring position information of the reticle, and second measuring means for measuring position information of the wafer, and it is more favorable to have the measuring means and for the parallel link to be driven based on the measuring means. Furthermore, it is preferable for the measuring means to have an interferometer, and it is favorable for the moving mirror used in the interferometer to be fixed to the table. Additionally, it is desirable for the measuring means to be supported on the same standard as the parallel link. • Wakui ¶ 17: It is desirable to have cooling means for cooling the actuator of the parallel link mechanism, and it is favorable for the cooling means to have air-cooling means for cooling the parallel link mechanism using a gas. It is particularly preferable to flow the gas from a side surface toward the parallel link mechanism. • Wakui ¶¶ 25-27: The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. In FIG.1, PL is a parallel link mechanism for driving the movable plate 19 to the main unit plate 8. 19 illustrates the movable plate, 21 illustrates a spherical bearing attached to the movable plate 19 and a fixed plate 20, and 22 illustrates an extendable actuator unit. In the present embodiment, the main unit plate 8

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		functions as a fixed plate, but another fixed plate may be provided separately on the main unit plate. A hydraulic actuator, an air pressure cylinder, an electric motor and a ball screw, a combination of an electric motor, a decelerator, and a ball screw, a linear motor, or the like can be used as the extendable actuator. A link 23 is configured of the spherical bearing 21 and the actuator unit 22, and in the parallel link mechanism illustrated in the drawings, the movable plate 19 and the fixed plate 20 are connected by a total of six links 23. By controlling the expansion amount of each link, the posture can be arbitrarily set in six degrees of freedom, namely the coordinate system of the movable plate 19 (x_1, y_1, z_1) with respect to the coordinate system provided in the fixed plate 20 (x_2, y_2, z_2). • Wakui ¶¶ 34-35: Moreover, because the movable plate, which is lightweight even when including the load, is driven, the heat generated by the actuator unit in the parallel link mechanism is insignificant. Furthermore, the actuator units can be centrally arranged in the lower part of the movable plate 19 in the parallel link mechanism. Because the stator of the linear motor is directly below the optical path of the laser interferometer in a conventional driving mechanism, the heat generated by the linear motor stator causes thermal fluctuation, resulting in positioning inaccuracy. However, in the present embodiment, by using the parallel link mechanism as the driving mechanism, because an actuator is disposed as a heat source far from the optical path of the laser interferometer, cooling and heat exhaust measures can be easily implemented, and a remarkable heat generation countermeasure effect can be obtained. As a cooling method, it is easy to cool the actuator by flowing gas as illustrated in the arrow in FIG. 1 to air cool. When doing so, it is desirable for the gas to

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		flow from the side surface toward the parallel link mechanism, but the direction of the flowing gas is not limited to this, and the cooling method of the actuator is also not limited to air cooling. • Wakui ¶ 38: Note that the present invention gives a specific description of a semiconductor exposure device (stepper) that intermittently drives and exposes a semiconductor wafer, but the present invention can also be applied to a scanning exposure device (scanner) that scans a reticle and a wafer in mutually opposite directions at a speed ratio determined from the reduction rate of the projection optical system and exposes such. Additionally, the present embodiment describes a semiconductor exposure device for performing exposure transfer of a reticle pattern on a wafer, but the present invention is not limited to a semiconductor exposure device, and the same effect can be obtained in an exposure device for exposing a photosensitive substrate such as a liquid crystal substrate. • Wakui at FIG. 1:

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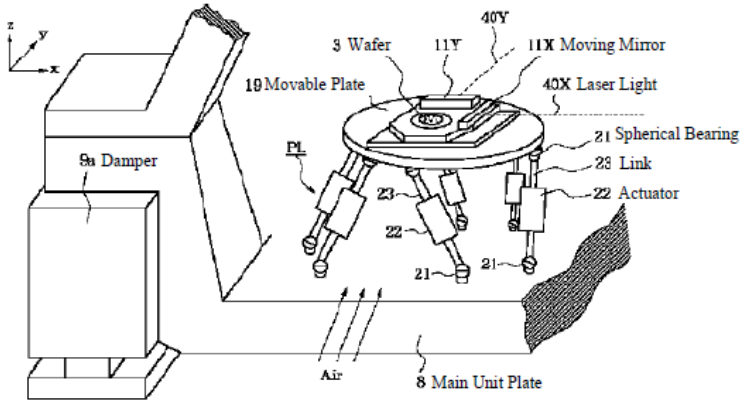
ELEMENT	'651 CLAIM ELEMENT	WAKUI
		[FIG. 1]  Furthermore, to the extent this limitation is not disclosed in Wakui, this limitation (and the claim as a whole) would have been obvious in the combination with references identified in Exhibits A1 to A14 relating to this limitation (including, for example, the various references that disclose well-known process chambers, as admitted to be well-known and conventional by the '651 Patent). Defendant's Preliminary Invalidity Contentions describes the motivation to combine Wakui and those references.
19[b]	adjusting said surface of said wafer stage by actuating at least one of a plurality of pneumatic cylinders that are operatively coupled to said wafer stage to accomplish at least one of raising, lowering and varying a tilt of said surface of said wafer stage;	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶¶ 25-27: The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. In FIG.1, PL is a parallel link mechanism for driving the movable plate 19 to the main unit plate 8. 19 illustrates the movable plate, 21 illustrates a spherical bearing attached to the movable plate 19 and a fixed plate 20, and 22 illustrates an extendable actuator unit. In the present embodiment, the main unit plate 8 functions as a fixed plate, but another fixed plate may be provided separately on the main unit plate. A hydraulic actuator, an air pressure cylinder, an electric motor and a ball screw, a combination of an electric motor, a decelerator, and a ball screw, a linear motor, or the like can be used as the extendable actuator. A link 23 is configured of the spherical bearing 21 and the actuator unit 22, and in the parallel link mechanism illustrated in the drawings, the movable plate 19 and the fixed plate 20 are connected by a total of six links 23. By controlling the expansion amount of each link, the posture can be arbitrarily set in six degrees of freedom, namely the coordinate system of the movable plate 19 (x_1, y_1, z_1) with respect to the coordinate system provided in the fixed plate 20 (x_2, y_2, z_2). *See also* 19[a] above; Wakui at, *e.g.*, FIG. 1 (above); ¶¶ 28-31, 38.
19[c]	positioning a wafer on said wafer stage; and	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 25:

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. *See also* Wakui at, *e.g.*, FIG. 1 (above); ¶¶ 28-31.
19[d]	performing a process operation on said wafer positioned on said wafer stage.	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 13: In light of the above, the exposure device of the present invention exposes and transfers a reticle pattern on a photosensitive substrate, and is provided with a table for holding the reticle or the photosensitive substrate, and a parallel link mechanism for positioning the table. • Wakui ¶ 38: Note that the present invention gives a specific description of a semiconductor exposure device (stepper) that intermittently drives and exposes a semiconductor wafer, but the present invention can also be applied to a scanning exposure device (scanner) that scans a reticle and a wafer in mutually opposite directions at a speed ratio determined from the reduction rate of the projection optical system and exposes such. Additionally, the present embodiment describes a semiconductor exposure device for performing

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		exposure transfer of a reticle pattern on a wafer, but the present invention is not limited to a semiconductor exposure device, and the same effect can be obtained in an exposure device for exposing a photosensitive substrate such as a liquid crystal substrate.
20	The method of claim 19, wherein providing a process chamber comprises providing at least one of a deposition chamber and an etching chamber.	To the extent that Ocean (incorrectly) asserts that lithography (including reticle patterning, photoresist, or exposure) satisfies this limitation, Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 38: Note that the present invention gives a specific description of a semiconductor exposure device (stepper) that intermittently drives and exposes a semiconductor wafer, but the present invention can also be applied to a scanning exposure device (scanner) that scans a reticle and a wafer in mutually opposite directions at a speed ratio determined from the reduction rate of the projection optical system and exposes such. Additionally, the present embodiment describes a semiconductor exposure device for performing exposure transfer of a reticle pattern on a wafer, but the present invention is not limited to a semiconductor exposure device, and the same effect can be obtained in an exposure device for exposing a photosensitive substrate such as a liquid crystal substrate. To the extent this limitation is not disclosed in Wakui, this limitation (and the claim as a whole) would have been obvious in combination with references identified in Exhibits A1 to A14 relating to this limitation. Defendant's Preliminary Invalidity Contentions describes the motivation to combine Wakui and those references.

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
21	The method of claim 19, wherein positioning a wafer on said wafer stage comprises positioning a wafer on said wafer stage after said wafer stage has been adjusted.	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 1: [Technical Field of Invention] The present invention relates to an exposure device that exposes and transfers a reticle pattern on a photosensitive substrate in a photolithography step for manufacturing a device such as an imaging element such as a semiconductor element or a CCD (charge coupled device), a liquid crystal display element, or a thin film magnetic head, and relates to a device manufacturing method and positioning device. In particular, the present invention relates to a semiconductor exposure device having a parallel link mechanism that can hold a semiconductor wafer, position it with high precision, and transport it at a high speed. • Wakui ¶ 24: In the drawings, 8 is a main unit plate supported by active supporting legs 9 that configure an active vibration isolation device. A positioning device having a parallel link mechanism PL for positioning a semiconductor wafer 3 is placed on the main unit plate 8. • Wakui ¶¶ 30-31: A signal from a laser interferometer 33, a position measuring instrument, is converted by a converter 51 into position coordinates in a total of six axes: X, Y, Z axes and three axes of rotation, which are an actual work coordinate system. Next, reverse conversion 52 is performed, and torque or a driving force to be generated by each actuator of the parallel link mechanism is calculated. Each actuator is driven based on an output signal after reverse conversion. As necessary, the speed sensor or acceleration sensor installed in the actuator unit

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		is utilized as a signal of a minor loop provided inside a position feedback loop based on position sensor output of a laser interferometer or the like. Meanwhile, the position sensor installed in the actuator unit 22 can be used as a feedback signal for maintaining the posture of the movable plate 19 without losing control of it when the output of the laser interferometer or the like is blocked, that is, when the laser light of the laser interferometer 33 irradiating the moving mirror 11 on the movable plate 19 or the laser light obliquely incident on the surface of the semiconductor wafer is blocked. Furthermore, it can be used when performing relatively rough positioning based on the output of the position sensor installed in the actuator unit 22 instead of the high-precision positioning based on the output of the laser interferometer 33. Thus, the movable plate 19 can be moved to an area where the laser interferometer cannot measure. In the case of a stepper, instead of the exposure operation of the semiconductor wafer, there is another handling operation for handing it off, and the precision of the positioning when doing so may be rough when compared to exposure. However, when performing operations when the semiconductor wafer 3 on the movable plate 19 must be moved to the outside of a measurement area of the laser interferometer 33, the actuator unit 22 itself has the position sensor. In such a case, the moving mirror 11 can be made smaller. Based on the output signal of the posture measuring system described above, torque or a driving force to be generated by each actuator 22 of the link 23 is calculated and driving is performed for stepping and repeating the semiconductor wafer 3. Each link then undergoes feedback control in coordination, the movable plate 19 quickly moves to the designated posture and is positioned, making high-speed movement possible along a designated track. • Wakui at claims 1-2:

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		[Claim 1] An exposure device that exposes and transfers a reticle pattern on a photosensitive substrate, comprising: a table for holding the reticle or the photosensitive substrate; and a parallel link mechanism for positioning the table. [Claim 2] The exposure device of claim 1, wherein the parallel link mechanism comprises a first parallel link mechanism for moving a table on which the wafer is mounted, and a second parallel link mechanism for moving a table on which the reticle is mounted. *See also* 19[c] above. Furthermore, to the extent this limitation is not disclosed in Wakui, this limitation (and the claim as a whole) would have been obvious in combination with references identified in Exhibits A1 to A14 relating to this limitation. Defendant's Preliminary Invalidity Contentions describes the motivation to combine Wakui and those references.
22	The method of claim 19, wherein positioning a wafer on said wafer stage comprises positioning a wafer on said wafer stage before said wafer stage is adjusted.	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 25: The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture

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		measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. *See also* Wakui at, *e.g.*, FIG. 1 (above); ¶¶ 28-31; *see also* 19[a]-19[b] above.
23	The method of claim 19, wherein performing a process operation on said wafer comprises performing at least one of a deposition process and an etching process in said process chamber.	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 13: In light of the above, the exposure device of the present invention exposes and transfers a reticle pattern on a photosensitive substrate, and is provided with a table for holding the reticle or the photosensitive substrate, and a parallel link mechanism for positioning the table. • Wakui ¶ 38: Note that the present invention gives a specific description of a semiconductor exposure device (stepper) that intermittently drives and exposes a semiconductor wafer, but the present invention can also be applied to a scanning exposure device (scanner) that scans a reticle and a wafer in mutually opposite directions at a speed ratio determined from the reduction rate of the projection optical system and exposes such. Additionally, the present embodiment describes a semiconductor exposure device for performing exposure transfer of a reticle pattern on a wafer, but the present invention is not limited to a semiconductor exposure device, and the same effect can be obtained in an exposure device for exposing a photosensitive substrate such as a liquid crystal substrate.

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		See claim 20 above. To the extent this limitation is not disclosed in Wakui, this limitation (and the claim as a whole) would have been obvious in combination with references identified in Exhibits A1 to A14 relating to this limitation. Defendant's Preliminary Invalidity Contentions describes the motivation to combine Wakui and those references.
24	The method of claim 19, wherein adjusting said surface of said wafer stage comprises adjusting said surface of said wafer stage by actuating at least one of three pneumatic cylinders, each of which are operatively coupled to said wafer stage by a ball and socket connection.	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 26: In FIG.1, PL is a parallel link mechanism for driving the movable plate 19 to the main unit plate 8. 19 illustrates the movable plate, 21 illustrates a spherical bearing attached to the movable plate 19 and a fixed plate 20, and 22 illustrates an extendable actuator unit. In the present embodiment, the main unit plate 8 functions as a fixed plate, but another fixed plate may be provided separately on the main unit plate. A hydraulic actuator, an air pressure cylinder, an electric motor and a ball screw, a combination of an electric motor, a decelerator, and a ball screw, a linear motor, or the like can be used as the extendable actuator. A link 23 is configured of the spherical bearing 21 and the actuator unit 22, and in the parallel link mechanism illustrated in the drawings, the movable plate 19 and the fixed plate 20 are connected by a total of six links 23. • Wakui at FIG. 1:

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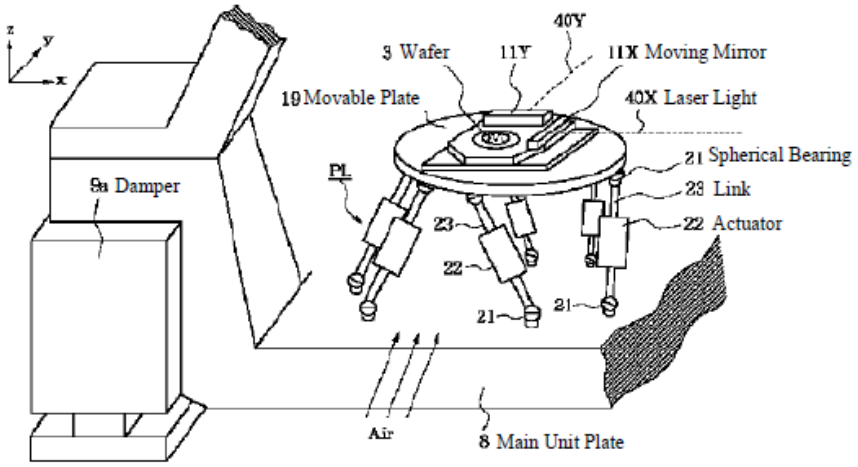
ELEMENT	'651 CLAIM ELEMENT	WAKUI
		[FIG. 1]  Furthermore, to the extent this limitation is not disclosed in Wakui, this limitation (and the claim as a whole) would have been obvious in combination with references identified in Exhibits A1 to A14 relating to this limitation. Defendant's Preliminary Invalidity Contentions describes the motivation to combine Wakui and those references.
72[Pre]	A method, comprising:	*See* 19[Pre] above.
72[a]	providing a process chamber comprised of a wafer stage, said wafer stage having a surface that is adjustable and located in a first plane;	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 1:

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		[Technical Field of Invention] The present invention relates to an exposure device that exposes and transfers a reticle pattern on a photosensitive substrate in a photolithography step for manufacturing a device such as an imaging element such as a semiconductor element or a CCD (charge coupled device), a liquid crystal display lement, or a thin film magnetic head, and relates to a device manufacturing method and positioning device. In particular, the present invention relates to a semiconductor exposure device having a parallel link mechanism that can hold a semiconductor wafer, position it with high precision, and transport it at a high speed. • Wakui ¶¶ 13-15: In light of the above, the exposure device of the present invention exposes and transfers a reticle pattern on a photosensitive substrate, and is provided with a table for holding the reticle or the photosensitive substrate, and a parallel link mechanism for positioning the table. The parallel link mechanism desirably has at least one of a first parallel link mechanism for moving a table on which the wafer is mounted, and a second parallel link mechanism for moving a table on which the reticle is mounted and it is desirable for at least one of the first and second parallel link mechanisms to be supported via a lens-barrel plate supporting a projection optical system. Moreover, it is desirable to have at least one of first measuring means for measuring position information of the reticle, and second measuring means for measuring position information of the wafer, and it is more favorable to have the measuring means and for the parallel link to be driven based on the measuring means. Furthermore, it is preferable for the measuring means to have an interferometer, and it is favorable for the moving mirror used in the

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		interferometer to be fixed to the table. Additionally, it is desirable for the measuring means to be supported on the same standard as the parallel link. • Wakui ¶ 17: It is desirable to have cooling means for cooling the actuator of the parallel link mechanism, and it is favorable for the cooling means to have air-cooling means for cooling the parallel link mechanism using a gas. It is particularly preferable to flow the gas from a side surface toward the parallel link mechanism. • Wakui ¶¶ 25-27: The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. In FIG.1, PL is a parallel link mechanism for driving the movable plate 19 to the main unit plate 8. 19 illustrates the movable plate, 21 illustrates a spherical bearing attached to the movable plate 19 and a fixed plate 20, and 22 illustrates an extendable actuator unit. In the present embodiment, the main unit plate 8 functions as a fixed plate, but another fixed plate may be provided separately on the main unit plate. A hydraulic actuator, an air pressure cylinder, an electric motor and a ball screw, a combination of an electric motor, a decelerator, and a ball screw, a linear motor, or the like can be used as the extendable actuator. A link 23 is configured of the spherical bearing 21 and the actuator unit 22, and in the parallel link mechanism illustrated in the drawings,

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		the movable plate 19 and the fixed plate 20 are connected by a total of six links 23. By controlling the expansion amount of each link, the posture can be arbitrarily set in six degrees of freedom, namely the coordinate system of the movable plate 19 (x_1, y_1, z_1) with respect to the coordinate system provided in the fixed plate 20 (x_2, y_2, z_2). • Wakui ¶¶ 34-35: Moreover, because the movable plate, which is lightweight even when including the load, is driven, the heat generated by the actuator unit in the parallel link mechanism is insignificant. Furthermore, the actuator units can be centrally arranged in the lower part of the movable plate 19 in the parallel link mechanism. Because the stator of the linear motor is directly below the optical path of the laser interferometer in a conventional driving mechanism, the heat generated by the linear motor stator causes thermal fluctuation, resulting in positioning inaccuracy. However, in the present embodiment, by using the parallel link mechanism as the driving mechanism, because an actuator is disposed as a heat source far from the optical path of the laser interferometer, cooling and heat exhaust measures can be easily implemented, and a remarkable heat generation countermeasure effect can be obtained. As a cooling method, it is easy to cool the actuator by flowing gas as illustrated in the arrow in FIG. 1 to air cool. When doing so, it is desirable for the gas to flow from the side surface toward the parallel link mechanism, but the direction of the flowing gas is not limited to this, and the cooling method of the actuator is also not limited to air cooling. • Wakui ¶ 38:

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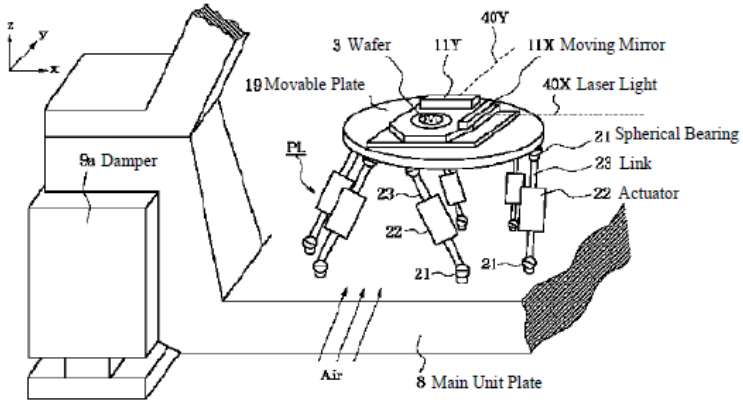
ELEMENT	'651 CLAIM ELEMENT	WAKUI
		Note that the present invention gives a specific description of a semiconductor exposure device (stepper) that intermittently drives and exposes a semiconductor wafer, but the present invention can also be applied to a scanning exposure device (scanner) that scans a reticle and a wafer in mutually opposite directions at a speed ratio determined from the reduction rate of the projection optical system and exposes such. Additionally, the present embodiment describes a semiconductor exposure device for performing exposure transfer of a reticle pattern on a wafer, but the present invention is not limited to a semiconductor exposure device, and the same effect can be obtained in an exposure device for exposing a photosensitive substrate such as a liquid crystal substrate. • Wakui at FIG. 1: [FIG. 1]  Furthermore, to the extent this limitation is not disclosed in Wakui, this limitation (and the claim as a whole) would have been obvious the combination with references identified in Exhibits A1 to A14 relating to this limitation

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		(including, for example, the various references that disclose well-known process chambers, as admitted to be well-known and conventional by the '651 Patent). Defendant's Preliminary Invalidity Contentions describes the motivation to combine Wakui and those references.
72[b]	adjusting said surface of said wafer stage by raising said surface of said wafer stage to a position wherein said surface of said wafer stage is positioned in a second plane that is offset from and approximately parallel to said first plane;	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶¶ 25-27: The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. In FIG.1, PL is a parallel link mechanism for driving the movable plate 19 to the main unit plate 8. 19 illustrates the movable plate, 21 illustrates a spherical bearing attached to the movable plate 19 and a fixed plate 20, and 22 illustrates an extendable actuator unit. In the present embodiment, the main unit plate 8 functions as a fixed plate, but another fixed plate may be provided separately on the main unit plate. A hydraulic actuator, an air pressure cylinder, an electric motor and a ball screw, a combination of an electric motor, a decelerator, and a ball screw, a linear motor, or the like can be used as the extendable actuator. A link 23 is configured of the spherical bearing 21 and the actuator unit 22, and in the parallel link mechanism illustrated in the drawings,

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		the movable plate 19 and the fixed plate 20 are connected by a total of six links 23. By controlling the expansion amount of each link, the posture can be arbitrarily set in six degrees of freedom, namely the coordinate system of the movable plate 19 (x_1, y_1, z_1) with respect to the coordinate system provided in the fixed plate 20 (x_2, y_2, z_2). *See also* 19[a] above; Wakui at, *e.g.*, FIG. 1 (above); ¶¶ 28-31, 38.
72[c]	positioning a wafer on said wafer stage; and	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 25: The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. *See also* Wakui at, *e.g.*, FIG. 1 (above); ¶¶ 28-31.
72[d]	performing a process operation on said wafer positioned on said wafer stage.	Wakui discloses this limitation based on at least the following citations. *See, e.g.*:

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		• Wakui ¶ 13: In light of the above, the exposure device of the present invention exposes and transfers a reticle pattern on a photosensitive substrate, and is provided with a table for holding the reticle or the photosensitive substrate, and a parallel link mechanism for positioning the table. • Wakui ¶ 38: Note that the present invention gives a specific description of a semiconductor exposure device (stepper) that intermittently drives and exposes a semiconductor wafer, but the present invention can also be applied to a scanning exposure device (scanner) that scans a reticle and a wafer in mutually opposite directions at a speed ratio determined from the reduction rate of the projection optical system and exposes such. Additionally, the present embodiment describes a semiconductor exposure device for performing exposure transfer of a reticle pattern on a wafer, but the present invention is not limited to a semiconductor exposure device, and the same effect can be obtained in an exposure device for exposing a photosensitive substrate such as a liquid crystal substrate.
73	The method of claim 72, wherein positioning a wafer on said wafer stage comprises positioning a wafer on said wafer stage after said wafer stage has been adjusted.	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 1: [Technical Field of Invention] The present invention relates to an exposure device that exposes and transfers a reticle pattern on a photosensitive substrate in a photolithography step for manufacturing a device such as an imaging

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		element such as a semiconductor element or a CCD (charge coupled device), a liquid crystal display element, or a thin film magnetic head, and relates to a device manufacturing method and positioning device. In particular, the present invention relates to a semiconductor exposure device having a parallel link mechanism that can hold a semiconductor wafer, position it with high precision, and transport it at a high speed. • Wakui ¶ 24: In the drawings, 8 is a main unit plate supported by active supporting legs 9 that configure an active vibration isolation device. A positioning device having a parallel link mechanism PL for positioning a semiconductor wafer 3 is placed on the main unit plate 8. • Wakui ¶¶ 30-31: A signal from a laser interferometer 33, a position measuring instrument, is converted by a converter 51 into position coordinates in a total of six axes: X, Y, Z axes and three axes of rotation, which are an actual work coordinate system. Next, reverse conversion 52 is performed, and torque or a driving force to be generated by each actuator of the parallel link mechanism is calculated. Each actuator is driven based on an output signal after reverse conversion. As necessary, the speed sensor or acceleration sensor installed in the actuator unit is utilized as a signal of a minor loop provided inside a position feedback loop based on position sensor output of a laser interferometer or the like. Meanwhile, the position sensor installed in the actuator unit 22 can be used as a feedback signal for maintaining the posture of the movable plate 19 without losing control of it when the output of the laser interferometer or the like is blocked, that is, when the laser light of the laser interferometer 33 irradiating the moving mirror 11 on the movable plate 19 or the laser light obliquely incident on the surface of the semiconductor wafer is blocked. Furthermore, it

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		can be used when performing relatively rough positioning based on the output of the position sensor installed in the actuator unit 22 instead of the high-precision positioning based on the output of the laser interferometer 33. Thus, the movable plate 19 can be moved to an area where the laser interferometer cannot measure. In the case of a stepper, instead of the exposure operation of the semiconductor wafer, there is another handling operation for handing it off, and the precision of the positioning when doing so may be rough when compared to exposure. However, when performing operations when the semiconductor wafer 3 on the movable plate 19 must be moved to the outside of a measurement area of the laser interferometer 33, the actuator unit 22 itself has the position sensor. In such a case, the moving mirror 11 can be made smaller. Based on the output signal of the posture measuring system described above, torque or a driving force to be generated by each actuator 22 of the link 23 is calculated and driving is performed for stepping and repeating the semiconductor wafer 3. Each link then undergoes feedback control in coordination, the movable plate 19 quickly moves to the designated posture and is positioned, making high-speed movement possible along a designated track. • Wakui at claims 1-2: [Claim 1] An exposure device that exposes and transfers a reticle pattern on a photosensitive substrate, comprising: a table for holding the reticle or the photosensitive substrate; and a parallel link mechanism for positioning the table. [Claim 2] The exposure device of claim 1, wherein the parallel link mechanism comprises a first parallel link mechanism for moving a table on which the wafer

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		is mounted, and a second parallel link mechanism for moving a table on which the reticle is mounted. *See also* 19[c] above. Furthermore, to the extent this limitation is not disclosed in Wakui, this limitation (and the claim as a whole) would have been obvious in combination with references identified in Exhibits A1 to A14 relating to this limitation. Defendant's Preliminary Invalidity Contentions describes the motivation to combine Wakui and those references.
74	The method of claim 72, wherein positioning a wafer on said wafer stage comprises positioning a wafer on said wafer stage before said wafer stage is adjusted.	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 25: The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. *See also* Wakui at, *e.g.*, FIG. 1 (above); ¶¶ 28-31; *see also* 72[a]-72[b] above.

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
75	The method of claim 72, wherein adjusting said surface of said wafer stage comprises adjusting said surface of said wafer stage by actuating at least one of a plurality of pneumatic cylinders that are operatively coupled to said wafer stage.	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶¶ 25-27: The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. In FIG.1, PL is a parallel link mechanism for driving the movable plate 19 to the main unit plate 8. 19 illustrates the movable plate, 21 illustrates a spherical bearing attached to the movable plate 19 and a fixed plate 20, and 22 illustrates an extendable actuator unit. In the present embodiment, the main unit plate 8 functions as a fixed plate, but another fixed plate may be provided separately on the main unit plate. A hydraulic actuator, an air pressure cylinder, an electric motor and a ball screw, a combination of an electric motor, a decelerator, and a ball screw, a linear motor, or the like can be used as the extendable actuator. A link 23 is configured of the spherical bearing 21 and the actuator unit 22, and in the parallel link mechanism illustrated in the drawings, the movable plate 19 and the fixed plate 20 are connected by a total of six links 23. By controlling the expansion amount of each link, the posture can be arbitrarily set in six degrees of freedom, namely the coordinate system of the movable

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		plate 19 (x_1, y_1, z_1) with respect to the coordinate system provided in the fixed plate 20 (x_2, y_2, z_2). *See also* 19[a] above; Wakui at, *e.g.*, FIG. 1 (above); ¶¶ 28-31, 38.
77[Pre]	A method, comprising:	*See* 19[Pre] above.
77[a]	providing a process chamber comprised of a wafer stage, said wafer stage having a surface that is adjustable and located in a first plane;	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 1: [Technical Field of Invention] The present invention relates to an exposure device that exposes and transfers a reticle pattern on a photosensitive substrate in a photolithography step for manufacturing a device such as an imaging element such as a semiconductor element or a CCD (charge coupled device), a liquid crystal display lement, or a thin film magnetic head, and relates to a device manufacturing method and positioning device. In particular, the present invention relates to a semiconductor exposure device having a parallel link mechanism that can hold a semiconductor wafer, position it with high precision, and transport it at a high speed. • Wakui ¶¶ 13-15: In light of the above, the exposure device of the present invention exposes and transfers a reticle pattern on a photosensitive substrate, and is provided with a table for holding the reticle or the photosensitive substrate, and a parallel link mechanism for positioning the table.

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		The parallel link mechanism desirably has at least one of a first parallel link mechanism for moving a table on which the wafer is mounted, and a second parallel link mechanism for moving a table on which the reticle is mounted and it is desirable for at least one of the first and second parallel link mechanisms to be supported via a lens-barrel plate supporting a projection optical system. Moreover, it is desirable to have at least one of first measuring means for measuring position information of the reticle, and second measuring means for measuring position information of the wafer, and it is more favorable to have the measuring means and for the parallel link to be driven based on the measuring means. Furthermore, it is preferable for the measuring means to have an interferometer, and it is favorable for the moving mirror used in the interferometer to be fixed to the table. Additionally, it is desirable for the measuring means to be supported on the same standard as the parallel link. • Wakui ¶ 17: It is desirable to have cooling means for cooling the actuator of the parallel link mechanism, and it is favorable for the cooling means to have air-cooling means for cooling the parallel link mechanism using a gas. It is particularly preferable to flow the gas from a side surface toward the parallel link mechanism. • Wakui ¶¶ 25-27: The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. In FIG.1, PL is a parallel link mechanism for driving the movable plate 19 to the main unit plate 8. 19 illustrates the movable plate, 21 illustrates a spherical bearing attached to the movable plate 19 and a fixed plate 20, and 22 illustrates an extendable actuator unit. In the present embodiment, the main unit plate 8 functions as a fixed plate, but another fixed plate may be provided separately on the main unit plate. A hydraulic actuator, an air pressure cylinder, an electric motor and a ball screw, a combination of an electric motor, a decelerator, and a ball screw, a linear motor, or the like can be used as the extendable actuator. A link 23 is configured of the spherical bearing 21 and the actuator unit 22, and in the parallel link mechanism illustrated in the drawings, the movable plate 19 and the fixed plate 20 are connected by a total of six links 23. By controlling the expansion amount of each link, the posture can be arbitrarily set in six degrees of freedom, namely the coordinate system of the movable plate 19 (x_1, y_1, z_1) with respect to the coordinate system provided in the fixed plate 20 (x_2, y_2, z_2). • Wakui ¶¶ 34-35: Moreover, because the movable plate, which is lightweight even when including the load, is driven, the heat generated by the actuator unit in the parallel link mechanism is insignificant. Furthermore, the actuator units can be centrally arranged in the lower part of the movable plate 19 in the parallel link mechanism. Because the stator of the linear motor is directly below the optical path of the laser interferometer in a conventional driving mechanism, the heat generated by the linear motor stator causes thermal fluctuation, resulting in positioning inaccuracy. However, in the present embodiment, by using the

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		parallel link mechanism as the driving mechanism, because an actuator is disposed as a heat source far from the optical path of the laser interferometer, cooling and heat exhaust measures can be easily implemented, and a remarkable heat generation countermeasure effect can be obtained. As a cooling method, it is easy to cool the actuator by flowing gas as illustrated in the arrow in FIG. 1 to air cool. When doing so, it is desirable for the gas to flow from the side surface toward the parallel link mechanism, but the direction of the flowing gas is not limited to this, and the cooling method of the actuator is also not limited to air cooling. • Wakui ¶ 38: Note that the present invention gives a specific description of a semiconductor exposure device (stepper) that intermittently drives and exposes a semiconductor wafer, but the present invention can also be applied to a scanning exposure device (scanner) that scans a reticle and a wafer in mutually opposite directions at a speed ratio determined from the reduction rate of the projection optical system and exposes such. Additionally, the present embodiment describes a semiconductor exposure device for performing exposure transfer of a reticle pattern on a wafer, but the present invention is not limited to a semiconductor exposure device, and the same effect can be obtained in an exposure device for exposing a photosensitive substrate such as a liquid crystal substrate. • Wakui at FIG. 1:

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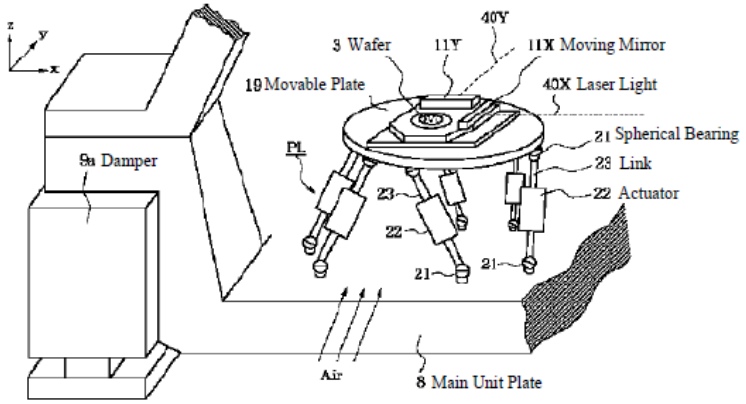
		[FIG. 1]  Furthermore, to the extent this limitation is not disclosed in Wakui, this limitation (and the claim as a whole) would have been obvious the combination with references identified in Exhibits A1 to A14 relating to this limitation (including, for example, the various references that disclose well-known process chambers, as admitted to be well-known and conventional by the '651 Patent). Defendant's Preliminary Invalidity Contentions describes the motivation to combine Wakui and those references.
77[b]	adjusting said surface of said wafer stage by lowering said surface of said wafer stage to a position wherein said surface of said wafer stage is positioned in a second plane that is	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶¶ 25-27: The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
	offset from and approximately parallel to said first plane;	placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. In FIG.1, PL is a parallel link mechanism for driving the movable plate 19 to the main unit plate 8. 19 illustrates the movable plate, 21 illustrates a spherical bearing attached to the movable plate 19 and a fixed plate 20, and 22 illustrates an extendable actuator unit. In the present embodiment, the main unit plate 8 functions as a fixed plate, but another fixed plate may be provided separately on the main unit plate. A hydraulic actuator, an air pressure cylinder, an electric motor and a ball screw, a combination of an electric motor, a decelerator, and a ball screw, a linear motor, or the like can be used as the extendable actuator. A link 23 is configured of the spherical bearing 21 and the actuator unit 22, and in the parallel link mechanism illustrated in the drawings, the movable plate 19 and the fixed plate 20 are connected by a total of six links 23. By controlling the expansion amount of each link, the posture can be arbitrarily set in six degrees of freedom, namely the coordinate system of the movable plate 19 (x_1, y_1, z_1) with respect to the coordinate system provided in the fixed plate 20 (x_2, y_2, z_2). *See also* 19[a] above; Wakui at, *e.g.*, FIG. 1 (above); ¶¶ 28-31, 38.
77[c]	positioning a wafer on said wafer stage; and	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 25:

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		The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. *See also* Wakui at, *e.g.*, FIG. 1 (above); ¶¶ 28-31.
77[d]	performing a process operation on said wafer positioned on said wafer stage.	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 13: In light of the above, the exposure device of the present invention exposes and transfers a reticle pattern on a photosensitive substrate, and is provided with a table for holding the reticle or the photosensitive substrate, and a parallel link mechanism for positioning the table. • Wakui ¶ 38: Note that the present invention gives a specific description of a semiconductor exposure device (stepper) that intermittently drives and exposes a semiconductor wafer, but the present invention can also be applied to a scanning exposure device (scanner) that scans a reticle and a wafer in mutually opposite directions at a speed ratio determined from the reduction rate of the projection optical system and exposes such. Additionally, the present embodiment describes a semiconductor exposure device for performing

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		exposure transfer of a reticle pattern on a wafer, but the present invention is not limited to a semiconductor exposure device, and the same effect can be obtained in an exposure device for exposing a photosensitive substrate such as a liquid crystal substrate.
78	The method of claim 77, wherein positioning a wafer on said wafer stage comprises positioning a wafer on said wafer stage after said wafer stage has been adjusted.	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 1: [Technical Field of Invention] The present invention relates to an exposure device that exposes and transfers a reticle pattern on a photosensitive substrate in a photolithography step for manufacturing a device such as an imaging element such as a semiconductor element or a CCD (charge coupled device), a liquid crystal display element, or a thin film magnetic head, and relates to a device manufacturing method and positioning device. In particular, the present invention relates to a semiconductor exposure device having a parallel link mechanism that can hold a semiconductor wafer, position it with high precision, and transport it at a high speed. • Wakui ¶ 24: In the drawings, 8 is a main unit plate supported by active supporting legs 9 that configure an active vibration isolation device. A positioning device having a parallel link mechanism PL for positioning a semiconductor wafer 3 is placed on the main unit plate 8. • Wakui ¶¶ 30-31: A signal from a laser interferometer 33, a position measuring instrument, is converted by a converter 51 into position coordinates in a total of six axes: X,

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		Y, Z axes and three axes of rotation, which are an actual work coordinate system. Next, reverse conversion 52 is performed, and torque or a driving force to be generated by each actuator of the parallel link mechanism is calculated. Each actuator is driven based on an output signal after reverse conversion. As necessary, the speed sensor or acceleration sensor installed in the actuator unit is utilized as a signal of a minor loop provided inside a position feedback loop based on position sensor output of a laser interferometer or the like. Meanwhile, the position sensor installed in the actuator unit 22 can be used as a feedback signal for maintaining the posture of the movable plate 19 without losing control of it when the output of the laser interferometer or the like is blocked, that is, when the laser light of the laser interferometer 33 irradiating the moving mirror 11 on the movable plate 19 or the laser light obliquely incident on the surface of the semiconductor wafer is blocked. Furthermore, it can be used when performing relatively rough positioning based on the output of the position sensor installed in the actuator unit 22 instead of the high-precision positioning based on the output of the laser interferometer 33. Thus, the movable plate 19 can be moved to an area where the laser interferometer cannot measure. In the case of a stepper, instead of the exposure operation of the semiconductor wafer, there is another handling operation for handing it off, and the precision of the positioning when doing so may be rough when compared to exposure. However, when performing operations when the semiconductor wafer 3 on the movable plate 19 must be moved to the outside of a measurement area of the laser interferometer 33, the actuator unit 22 itself has the position sensor. In such a case, the moving mirror 11 can be made smaller. Based on the output signal of the posture measuring system described above, torque or a driving force to be generated by each actuator 22 of the link 23 is calculated and driving is performed for stepping and repeating the semiconductor wafer 3. Each link then undergoes feedback control in coordination, the movable plate 19 quickly moves to the designated posture

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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		and is positioned, making high-speed movement possible along a designated track. • Wakui at claims 1-2: [Claim 1] An exposure device that exposes and transfers a reticle pattern on a photosensitive substrate, comprising: a table for holding the reticle or the photosensitive substrate; and a parallel link mechanism for positioning the table. [Claim 2] The exposure device of claim 1, wherein the parallel link mechanism comprises a first parallel link mechanism for moving a table on which the wafer is mounted, and a second parallel link mechanism for moving a table on which the reticle is mounted. *See also* 19[c] above. Furthermore, to the extent this limitation is not disclosed in Wakui, this limitation (and the claim as a whole) would have been obvious in combination with references identified in Exhibits A1 to A14 relating to this limitation. Defendant's Preliminary Invalidity Contentions describes the motivation to combine Wakui and those references.
79	The method of claim 77, wherein positioning a wafer on said wafer stage comprises positioning a wafer on said wafer stage before said wafer stage is adjusted.	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶ 25: The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a

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Comparison of U.S. Patent No. 6,660,651 and Japanese Unexamined Patent App. Pub. No. JP H11-274031 (Wakui)

ELEMENT	'651 CLAIM ELEMENT	WAKUI
		multi-light beam 40 from a laser interferometer for posture measurement is placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter. *See also* Wakui at, *e.g.*, FIG. 1 (above); ¶¶ 28-31; *see also* 77[a]-77[b] above.
80	The method of claim 77, wherein performing a process operation on said wafer comprises performing at least one of a deposition process and an etching process on said wafer in said process chamber.	*See* claims 19[d], 20 and 23 above.
81	The method of claim 77, wherein adjusting said surface of said wafer stage comprises adjusting said surface of said wafer stage by actuating at least one of a plurality of pneumatic cylinders that are operatively coupled to said wafer stage.	Wakui discloses this limitation based on at least the following citations. *See, e.g.*: • Wakui ¶¶ 25-27: The semiconductor wafer 3 is held on a lightweight and highly rigid movable plate (table) 19 made of ceramic, and a moving mirror 11 for irradiating a multi-light beam 40 from a laser interferometer for posture measurement is placed on the movable plate 19. In addition, although not illustrated in the drawings, there is a focus and leveling measurement system by irradiating the surface of the semiconductor wafer 3 with a light beam. That is, a posture measuring system is provided having six degrees of freedom for the movable plate 19. The posture control method will be described hereinafter.

Exhibit A-02 to Defendant's Invalidity Contentions:
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ELEMENT	'651 CLAIM ELEMENT	WAKUI
		In FIG.1, PL is a parallel link mechanism for driving the movable plate 19 to the main unit plate 8. 19 illustrates the movable plate, 21 illustrates a spherical bearing attached to the movable plate 19 and a fixed plate 20, and 22 illustrates an extendable actuator unit. In the present embodiment, the main unit plate 8 functions as a fixed plate, but another fixed plate may be provided separately on the main unit plate. A hydraulic actuator, an air pressure cylinder, an electric motor and a ball screw, a combination of an electric motor, a decelerator, and a ball screw, a linear motor, or the like can be used as the extendable actuator. A link 23 is configured of the spherical bearing 21 and the actuator unit 22, and in the parallel link mechanism illustrated in the drawings, the movable plate 19 and the fixed plate 20 are connected by a total of six links 23. By controlling the expansion amount of each link, the posture can be arbitrarily set in six degrees of freedom, namely the coordinate system of the movable plate 19 (x_1, y_1, z_1) with respect to the coordinate system provided in the fixed plate 20 (x_2, y_2, z_2). *See also* 19[a] above; Wakui at, *e.g.*, FIG. 1 (above); ¶¶ 28-31, 38.